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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,854	01/26/2004	Anton Okmianski	CIS03-54(8118)	9792

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EXAMINER

MARTINEZ, DAVID E

ART UNIT	PAPER NUMBER
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2181

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/764,854	Applicant(s) OKMIANSKI ET AL.	
	Examiner David E. Martinez	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-20 is/are rejected.
- 7) ☒ Claim(s) 1-7, 11-17, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

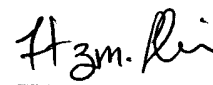
Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


 Supervisory/ **FRITZ FLEMING**
PRIMARY EXAMINER 5/1/2006
 GROUP 2800
 AU 2181

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7, 9-17 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regards to claim 1, lines 6,10,15,17,18,20 and 23, the term "a stable storage device" is a relative term which renders the claim indefinite. The term "a stable storage device" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "a stable storage device" is a subjective term that lacks precision. The noun "stable" might mean resistant to change or unchanging to one person, but not to another. It's a relative term and thus isn't clear. Perhaps the Applicant meant to use the term "non-volatile"?

With regards to claims 2-7, 9-17 and 19-20, the numerous uses of the term "a stable storage device" render the claims indefinite for the same reasons as those used above under the claim1 rejection. The use of the term was too numerous to point out each instance. Due to the number of 35 USC § 112, second paragraph rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejection(s), however, the list of rejections may not be all inclusive. Applicant should refer to these rejection(s) as examples of deficiencies and should make all the necessary corrections to eliminate the 35 USC § 112, second paragraph problems and place the claims in a proper format.

With further regards to claim 3, in line 4, the term "a recent rate" is also a relative term and thus renders the claim indefinite for the same reasons as those set above under the claim 1 rejection. In addition, in line 5, the term "an average transaction" is not clear since the claim fails to define what "an average transaction" is. It isn't clear how an average transaction is defined.

With further regards to claim 4, lines 11 and 13 also use the term "an average transaction" just as claim 3 does above and thus is rejected under the same rationale.

With regards to claim 7, line 21 uses the term "then taking the average data amount of data in the data buffer" which is not clear. It is not clear what the Applicant is trying to convey with that term. Clarification is respectfully requested.

Due to the vagueness and a lack of clear definiteness used in the claims, the claims have been treated on their merits as best understood by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9-10 and 18 rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication No. US 2002/0091722 A1 to Gupta et al. (hereinafter Gubta).

1. With regards to claims 9 and 18, Gubta teaches a transaction system that efficiently batches transactions [fig 1 element 100], comprising:

a data interface to receive transactions [paragraph 51 lines 2-4, "I/O manager 140 receives requests... - ...data contained in storage devices 110"];

a stable storage device to store processed transactions [fig 1 elements 110];

a memory including a data buffer and a system performance history [fig 1 element 145], the system performance history including system performance data about rates of flushing the data buffer to the stable storage device and batch sizes of flushing the data buffer to the stable storage device [paragraph 51]; and

a controller coupled to the interface [fig 1 element 105], the stable storage device [fig 1 elements 110] and the memory [fig 1 element 145], the controller configured to process the transactions, to write the processed transactions to the data buffer, to flush the data buffer to the stable storage device according to the system performance data from the system performance history, and to update the system performance history with data from the flush of the data buffer to the stable storage device [paragraphs 50-51 - the communication with fig 1 elements 110 must be bidirectional (must be able to store data) for the system to be able to retrieve data from elements 110].

2. With regards to claim 10, Gubta teaches the system of claim 9 wherein the controller further comprises:

a transaction processor [fig 1 element 105] to process transaction and to write the processed transactions [paragraphs 50-51]; and

a flush processor [fig 1 element 105] to flush the data buffer to the stable storage device and to update the system performance history [paragraphs 50-51].

Allowable Subject Matter

Claim 8 is allowed over the prior art of record.

Claims 1-7, 19 and 20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 11-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As per claims 1, 8, 19 and 20, the prior art of record alone or in combination fail to teach or fairly suggest:

determining if a received transaction is a single transaction in the system or not, and then flushing the data buffer to a storage device if it is, and if it isn't the only transaction in the system, determining whether a maximum response time will be met for an oldest transaction waiting for a flush in the system if the data buffer were flushed to the storage device immediately;

determining if a maximum response time will or will not be met, and then flushing the data buffer to a storage device if it will be met, and if it's not going to be met, determining whether a rate of data of incoming transactions is higher than a rate of flushing data from the data buffer to the storage device if flushed immediately;

determining if the rate of data of incoming transactions is lower or higher than the rate of flushing data from the data buffer to the storage device if flushed immediately, and if the rate is lower, then flushing the data buffer to the storage device, and if the rate is higher then waiting to receive another transaction; and

updating a flush performance history after each flush of the data buffer to the storage device.

As per claim 11, the prior art of record alone or in combination fail to teach or fairly suggest: determining if a maximum response time for an oldest transaction in a data buffer will or will not be met, and then flushing the data buffer to a storage device if it will not be met.

As per claim 12, it depends from claim 11 and thus its reasons for indication of allowable subject matter follow the same rationale.

As per claim 13, the prior art of record alone or in combination fail to teach or fairly suggest: determining a rate of incoming data and a rate of flushing data, and if the rate of incoming data is higher than the rate of flushing data, then wait to receive further transactions so as to develop a larger batch of processed transactions.

As per claim 14, the prior art of record alone or in combination fail to teach or fairly suggest: adjusting the frequency of flushing and amount of data per flush to the storage device based on information from the system performance history.

As per claim 15, the prior art of record alone or in combination fail to teach or fairly suggest: a system performance history being a table having a plurality of buckets, each bucket having a minimum and a maximum amount of data buffer data for which that bucket holds statistics, each bucket capable of storing a plurality of entries, and wherein each entry is an observed time to flush the data in the data buffer to the stable storage device.

As per claim 16-17, they depend from claim 15 and thus their reasons for indication of allowable subject matter follow the same rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 6,570,848 to Loughran et al. teaches a system and method for handling bursts of data in a buffer when the incoming rate is higher than the outgoing rate.

US Patent Application Publication No. US 2004/0215872 A1 to Dawson et al. teaches flushing of data to a storage device at the end of a transaction.

US Patent No. 5,664,106 to Caccavale teaches tracking cache flushing rates.

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US Patent No. 5,615,362 to Jensen et al teaches the flushing of cache data at the end of each transaction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Martinez whose telephone number is (571) 272-4152. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on 571-272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DEM

Fritz M. Fleming
FRITZ FLEMING
Supervisory/PRIMARY EXAMINER 5/1/2006
GROUP 2100
AU 2181